

University News

MONDAY, OCTOBER 19, 1987

Rs. 1.

Value-Orientation in Higher Education



Erosion of Desire to Give



Energy Education

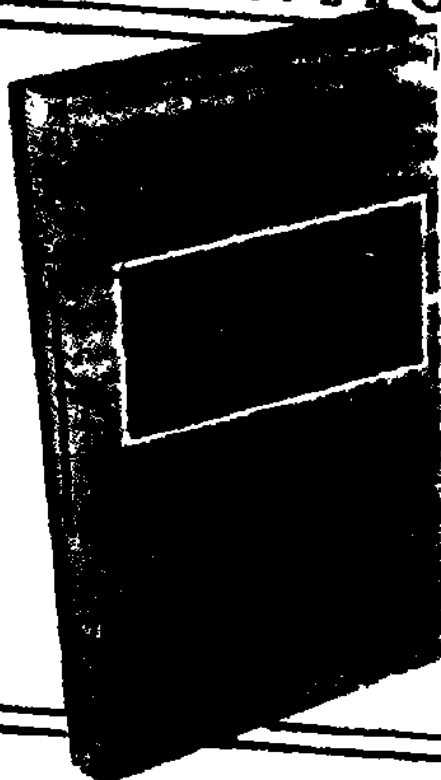


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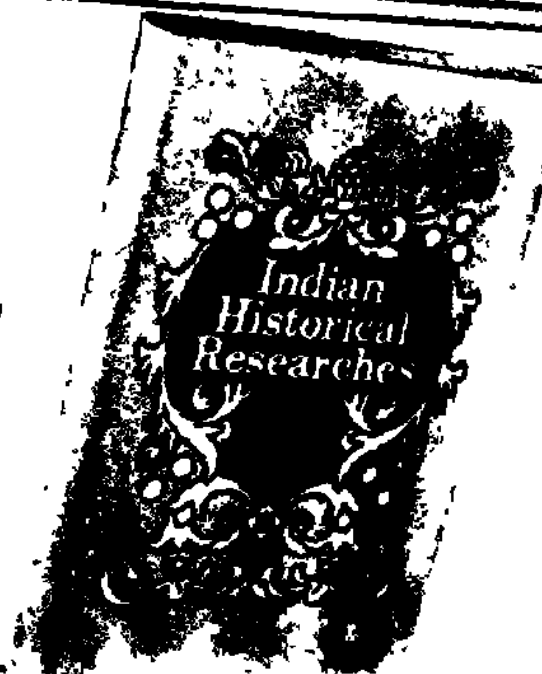
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UNIVERSITY NEWS

VOL. XXV **OCTOBER 19**
No. 42 **1987**
Price **Rs. 1.50**

**A Weekly Chronicle of Higher
Education published by the
Association of Indian Universities**

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do not necessarily reflect the
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Editor :
SUTINDER SINGH

Value-Orientation in Higher Education

S.V. Chittibabu*

We live in a time when established beliefs, practices and routines have come to experience the shock of a frightful challenge. Perplexity and doubt, confusion and uncertainty are destabilising the even tenor of life in most parts of the world. Old foundations are breaking up and the new edifice is yet to get into proper shape.

Turning and turning in the widening gyre
The falcon cannot hear the falconer;
Things fall apart, the centre cannot hold;
Mere anarchy is loosed upon the world,
The blood-dimmed tide is loosed and everywhere
The ceremony of innocence is drowned;
The best lack all conviction, while the worst
Are full of passionate intensity.

—W.B. Yeats

⚡ The world to-day is at its wits' end, caught up as it is in a crossfire between rank materialism and universal humanism—weapons of destruction being stockpiled on the one side and peace conventions and goodwill meetings being organised on the other. Man presents the picture of a schizophrenic, a split personality, at once a victim of agony and hopelessness and a dreamer of a brave new world. There is a sharp dichotomy between thought and action. As Cardinal Newman puts it, "many a man would seem to live and die upon a dogma, no man will be a martyr for a conclusion." The human race is desperately in need of a living emotional life rich enough to tide over the frustration let loose by materialistic industrialism and deep enough to bring together its members to battle for a fulfilling faith.

Contemporary Educational Montage

⚡ The rough and tumble of current populist politics, atrocious corruption not only in high places but up and down the line, the tyranny of muscle power and brutal violence, the defilement of all standards of democratic behaviour, the unconscionable disregard of all principles of moral propriety, the emergence of a new tribe of carpetbaggers—all these have cast their sinister shadows on the academic world. Our Universities and colleges are becoming breeding grounds of aggressive communalism, casteism, sectarianism and regionalism.

(a) Falling Standards of Student Behaviour

It may be contended that our university education has turned out scholars, doctors, engineers, technologists and business executives of quality comparable with the most outstanding products of the best universities of the world. But then against this microscopic minority of quality products, the outweighing majority come out of the domain of higher education with hardly any sense of social commitment or sensitivity to the realities of their environment.

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ANBAGAM, 4 Rajaram Mehta Nagar, Madras.

In most of the professional colleges under the innocuous veneer of ragging, the innocent freshers are subjected to humiliating and savage treatment by a morally depraved section of seniors. They get jettisoned all too suddenly into an inferno of obscenities and perversities. The drug pushers and other fiendish forces of the underworld have penetrated into the crumbling bastions of professional learning.

(b) Teacher Militancy

//The piquant opening statement of the Kothari Education Commission's Report that the destiny of India is being shaped in her classrooms is too well known to bear repetition. But the questions now asked are: who is shaping that destiny in the classroom? Are there enough dedicated teachers with the determination, vigour and skill to shape our educational systems in such a manner as to make them function as powerful instruments of political, economic and social change? It is a thousand pities that dharnas, strikes and slogan shoutings have become the ready weapons of offensive action used by teachers as pressure tactics to achieve their purposes. //

(c) Sterility of Curriculum

//Our curricular offerings have become jejune and irrelevant, syllabuses are treated as a sort of legal document instead of a guide meant to help the teacher as well as the student. Anything which is outside the syllabuses becomes taboo in teaching and examining. The concept of liberal education as a preparation of the student for free and independent thinking, for critical investigation and evaluation, and for imaginative and constructive thought and action has been unfortunately lost sight of. //Gasset, the critic, calls the graduate who is ignorant of the essential system of ideas concerning the world and man as "the new barbarian, a laggard behind the contemporary civilisation archaic, primitive and uncultured." Our higher education has defaulted in inculcating in the student community an understanding of his social heritage and an awareness of the intellectual, aesthetic and moral values expressed in literature and art, religion and philosophy.

(d) Pedagogic Obsolescence

//Mass lectures and note-dictation continue to dominate the classroom thereby making instruction deplorably uninspiring and intellectually stultifying. This unhappy situation is further worsened by the undue emphasis placed on dull and selective cramming giving

little room for curiosity, problem-solving ability and creative thinking. Except for the classroom contacts between teachers and students, no serious attempts have been made to provide for effective tutorials which alone can enable the learner to discover, to analyse, to judge and to evaluate under the social and moral guidance of his mentor. //Seminars and tutorials which stimulate joint discussions at a maturer level and enable the participants to get at the truth through co-operative approach have become few and far between.

(e) The Examination Leviathan

The monster of examination has ruthlessly mayhemmed education at all levels. With all instruction subordinated to its nightmarish stranglehold, rote learning and memorising have acquired a shocking premium with the result, that all initiative and originality in the teacher and students have got smothered. Frittering away their time for most part of the year in fun and frolic, the student-examinees have become adepts in resorting to unethical practices as mass copying, intimidation of invigilators and bribing of evaluators. //External examinations have crippled the quality of work in higher education and corrupted the moral standards of university life. //The whole process of higher education has become "warped, disoriented and dysfunctional."

Higher Education at the Cross Roads

//Higher education has come to a stage when it has to decide the direction, it must take from now if it is not to lose its credibility as a mission-oriented agency in pursuit of truth and excellence. Because of its having got entangled in the spider web of materialism and factionalism, demagoguery and knavery, egotism and hypocrisy, greed and hatred, it has forfeited its claims to be regarded as the sacred fountain of ideas and idealism. Our revered spiritual mentor, Bhagwan Sri Sathya Sai Baba, the grand designer of the path-breaking programme of 'Education in Human Values' delivering the Benediction Address at the Fifth Convocation of Sri Sathya Sai Institute of Higher Learning on November 22, 1986, had made this sobering comment: "Science and Technology have expanded vastly to-day. Their gifts have made life more comfortable and pleasant. But they have brought with them grief, loss and calamity in far greater degree...More than all, they have bred domination and concentration of authority...The emergence of discordant notes has silenced the call of the divine from within man.....Man has become so stupid that he has neither fear of sin nor

love for God. How can then he be secure in peace and escape from catastrophe?"

The point that Bhagwan Baba hammers in is that the spectacular advances of science and technology have tended to brush aside the life of the mind and spirit. While a few may persevere with selfless devotion in the pursuit of higher values, an overwhelming majority is stupidly content with trifles or power and pelf. We have, therefore, to explore the great mastery of life with the antennae of our instincts, emotions and intuition and examine with imagination and courage the values that we cherish.

Our Universities should play a decisive role in resolving the present moral crisis confronted by higher education. They cannot run away from the armageddon throwing up their hands in despair as if they have lost the battle. The words of Prof. K. G. Saiyidain are worth recalling in this context: "If the universities will borrow their standards and criteria from the stock market or the political platform and will not stand up against the many trends which are corroding man's life socially and morally—subservience to power, moral laryngitis, disregard for scholarship, lack of respect for truth, conformity to customs and winds of fashion, the cult of the 'organisation man' the increasing tempo of indiscipline and violence in life—they will fail in their basic purpose." Socially, intellectually and morally, every centre of higher learning has to become the prototype of the good society of the future where the right values reign supreme. Its moral and spiritual leadership should prevail under all conditions and at all times. But if the salt hath lost its savour—that is, the quality of leadership gets devalued—we may as well wonder wherewith it will be salteth.

The Talisman of Value-Orientation

Higher education is to stand up to the stresses and strains, limitations and compulsions which are the outcome of its failure to adhere to its avowed objectives and ideals and if it is to achieve a breakthrough from its present entanglement, a dynamic, vigorous and pace-setting programme of value-orientation is what is most urgently needed for implementation in all the universities and colleges. Recognising this desideratum, the National Policy on Education 1986, has called for an immediate reconstruction of the curriculum in such a way as to make the understanding, appreciation and practice of social and moral values an integral part of the process of Education. Its *raison d'être* is reflected in the following emphasis it has laid on value-imbued higher education:

"8.4 The growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need for readjustment in the curriculum in order to make education a forceful tool for the cultivation of social and moral education.

8.5 In our culturally plural society, education should foster universal and eternal values oriented towards the unity and integration of our people. Such value education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism.

8.6 Apart from this combative role, value education has a profound positive content based on our heritage, natural goals and universal perceptions. It should lay primary emphasis on this aspect."

// In the light of the above unambiguous stress placed on value-based education, it becomes our primary commitment to see that higher education becomes a well-proportioned preparation for the student to live a full life with that creative human spirit which is in constant search for more truth, more goodness, more beauty and more light. For man's true life, as Bertrand Russell has also argued, consists not in the satiation of his pressing physical wants, but "in art and thought and love, in the creation and contemplation of beauty and in the scientific understanding of the world."

The Amalgam of Knowledge and Values

// It is universally recognised that knowledge and values are not watertight compartments. The true educator describes the meaningful continuity between the education of the mind and education in values and the resulting enrichment of personal and social life. Education needs, therefore, to be looked upon as a single, though, intricately complex and continuous activity in which mental, social and moral training is wholly involved. In the words of Tagore, "knowledge must be acquired and imparted—with a passion, an integrity, a sense of detachment and in a spirit of fellowship." It is this kind of knowledge that paves the way for the emergence of a truly human society in which values are honoured and put into practice—values of freedom, truth, justice, integrity, fraternity, mutual tolerance and love. As Bronowski pinpoints perspicaciously, "a society holds together by the respect which man gives to man; it fails when its concept of man fails."

Universities should strive to keep this perspective

in view without getting lost in mere academic exercises which do not define the entirety of its magnificent function which is to make man a creator, to inculcate values that lend meaning and grace to his life as well as dignity and stability to his society. They should make knowledge pulsate with intellectual excitement and passion and stir up the fabric of the learner's personality. The degree of success of a university has to be measured against this exacting challenge.

The Paradigm of Sri Sathya Sai Institute of Higher Learning

// Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam has come upon the educational scene to accept the gauntlet and prove that given the will and spirit of go-aheadness, a university can prove that value-orientation is not a chimera but a pragmatic programme of action replete with immeasurable potential for transmitting education into an energising force for achieving the over-arching purpose of propelling, uniting and guiding both teachers and students along a line of valid direction with humility in their hearts and compassion for mankind. This Institute exemplifies Bhagwan Baba's vision, expectations and hopes. Its uniqueness consists in its cultural fusion, exchange and synthesis cutting across communal and religious barricades, state borders and even national frontiers. One can see a mini-India in its campus in all its cultural and spiritual efflorescence. The Institute attempts what is technically possible and ideologically desirable, the nexus between science and spirituality and the imaginative formulation of Awareness and Foundation courses and self-reliance projects that make the interplay between head and heart a truly joyous and illuminating experience. The five unfailing ethical stallions that will lead the graceful chariot of the Institute with Bhagwan Baba as the omniscient Charioteer towards its set goals are Sathya (Truth), Dharma (Right Conduct), Shanthi (Peace), Prema (Love) and Ahimsa (Non-Violence). These five broad universal values encompass several other important values like good manners, tidiness, self-control, comradeship, co-operation, tolerance, secular outlook, self confidence, self reliance, self sacrifice, service to people, etc. The Stupa in the centre of Prasanthi Nilayam, the Abode of Absolute Peace, proclaims unto the world at large the essential unity of all religions and faiths—a unity that harmonizes them and gives them reality. The Sri Sathya Sai Institute of Higher Learning stands out as a lighthouse nonpareil, amidst the encircling gloom, and an oasis of hope amidst a desert of emptiness and forlornness. Let the trail blazed by it help other seminaries of higher

learning to chart out a flexible and feasible Agenda for Action.

Steps towards Value Orientation

1. Universities should openly reaffirm their faith in value orientation as both a palladium and a moral elixir and disseminate the message which is loud and clear among the academic community and the public. They should plan and perform, resolve and execute with firmness of purpose;

2. The curriculum should be so revamped as to make integrated approach its hallmark. Awareness and Foundation courses should be woven into the tapestry of the curriculum with a view to promoting an understanding of controlling principles and chief causes of phenomena, objective critical enquiry, creative thinking, an appreciation of unity in diversity, a liberal outlook and a humanistic attitude. A discerning knowledge of the history of Indian culture should be insisted upon. The unique feature of India's cultural heritage, viz. its unity and continuity down through the ages should be brought home;

3. The synthesis of science and spirituality and the blending of material prosperity with human values should be duly emphasised;

4. A climate of intellectual and emotional dimensions to generate sentiments and feelings of national solidarity and unity should be created;

5. Necessary reading materials containing the sayings and writings of eminent thinkers, philosophers and seers should be specially prepared and made available for both teachers as well as students;

6. Festivals, games, dramas, exhibitions of artistic creations, etc. should be organised periodically;

7. Documentaries on India's cultural treasures and natural wealth should be obtained and shown to the academic fraternity;

8. Inter-university sports and cultural meets that foster desirable behaviour patterns and the tolerance of differences in inter-group relations are presently arranged by the Association of Indian Universities with funds provided by the Ministry of Sports and Youth Affairs. This healthy trend should be vigorously encouraged and made to gather tempo;

9. The N.C.C. and the N.S.S. should be reinvigorated with adequate funds and resources so that they may develop leadership, character, friendship, team-spirit and the ideal of service. Definite action should be taken through Students' Welfare Services to make the campus life of students pleasurable and stimulating;

10. As the teachers constitute the sheet anchor of any academic programme, they need to be intellectually, emotionally and spiritually reanimated for which suitable Refresher Courses and Pre-service and In-service Training programmes would be necessary. Their motivation is a must for implementing the policy for value development. They should be made to redesign their pedagogic techniques for making their teaching evocative and responsive to the demands of value-based education ;

11. The present examination machinery needs to be thoroughly overhauled, nay, restructured drastically if it is not to lead higher education into a welter of greater chaos. It has to be refurbished with objective methods of testing intelligence, aptitude, achievements and personality traits of students in the context of the programme of value orientation; and

12. As only an autonomous institution unfettered by regimentation of ideas and pressure of power or party politics can pursue truth fearlessly and build up in its teachers and students qualities of head and heart and habits of uninhibited thinking and searching enquiry, a phased programme should be initiated by universities to confer autonomous status on colleges so that they may play a positive role in making value orientation a reality.

To Act and not Dither

Have we not seen some persons who are pathetic, spineless characters, the embodiment of inert aspirations fondly building castles in the air or dreaming of a holiday in Ooty or Srinagar but simply dithering and doing nothing about it ? But universities can ill-afford to vacillate. Merely assembling, discussing and passing resolutions will not cut any ice. Demosthenes was once asked: "what is the most important quality in oratory?" and he replied : "Action, Action, Action." If the programme of value orientation in higher education is to take off from the ground, planned action alone can be the prime mover. As Edward Irving has cautioned, "procrastination is the kidnapper of souls and the recruiting officer of hell". Any further delay will be a moral defection. The task is no doubt a formidable one which may sometimes prove tantalizing and heartbreaking. But, as Dr Radhakrishna says, "tears and smiles make the music of life". The ends we have set before ourselves are worthy and commendable. We are to sow a spark and reap a star. May we then play our role in this grand adventure responsibly and exemplarily. Let us not forget that we have the rare Blessing of Bhagwan Baba to enable us to reap a 'Golden Harvest'. □

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderabad.

The New Education Policy (NEP) visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour.

Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness

programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the Conference will focus on the following topics :

- I. Management of Higher Education
- II. Improvement in Efficiency
- III. New Strategies in Higher Education

PROGRAMME

December 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M.	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110 002.
Telephone : 3310059
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Telegram : 'ASINDU'

EROSION OF DESIRE TO GIVE

Amrik Singh*

Recently, after 40 years of India's independence, quite a number of people attempted to strike a balance-sheet of what we had gained and what we had lost during these four decades. One leading newspaper got a whole series of articles written on the state of the nation.

Most of the writing done on this occasion is in the vein that there have been pluses and minuses. In certain sectors of activity the country has done well, in certain others, it has not done so well. It has also been said that there have been a number of gaps and omissions. Several people have noticed the change of ethos that has taken place since the departure of the British. It has been difficult, however, to be precise about what has gone wrong.

Something has gone wrong, most people admit, but what precisely has gone wrong is difficult to identify. Everyone who thinks about this problem has his own answer to this question. I too had some kind of a vague answer in my mind. But a book just published has enabled me to be a little more precise. I refer to Asok Mitra's book **Three Score and Ten**, published by Mandira from Calcutta.

As several people may recall, he was one of the more distinguished members of the ICS which continued to serve the country after 1947. As Registrar-General of the Census, he did a creditable job. In consequence, he emerged as a leading demographer in the country. Towards the end of his career, he wound up with a couple of other assignments including a stint at the Jawaharlal Nehru University, New Delhi.

Having crossed the biblical age of three score and ten, he had the not uncommon idea on writing an autobiography. He was decided to divide that into three parts. Only the first part sub-title **The First Score and Three**, has appeared. In this slim volume of 126 pages he describes his childhood, early schooling, the process of growing into an adult, college and university education and entry into the ICS.

The book makes interesting reading but it is not particularly exciting. At the same time, the book has two points of strength which mark it out as some-

what unusual. One of them can be dealt with somewhat easily. As a bright young man at the University of Calcutta, he got drawn into the group which was bringing the well-known literary journal, **Parichay**, and got to know some of the leading writers of those days. Among them were Bishnu Dey, Sudhindranath Datta, Buddhadeb Basu and Samar Sen. Mitra's book glows with excitement when he talks of those dizzy days when he was a member of the avant garde literary circles and was on informal terms with a number of the influential writers and artists of the post-Tagore era.

It is the second aspect of the book which has moved me deeply and helped me to identify what was it that died in '47. The point is made clearly in the description of his student days. Talking of his school, for instance, he says :

There is nothing like a guru. You can learn a thing by yourself but it is the guru who teaches you how to relate it to different universes of discourse. This latter kind of grooming was to await my later gurus. This was but the beginning and I needed gurus who would furnish me with basic knowledge. This my school teachers were qualified to do very competently...Thus I spent an extra year in school which evened out the double promotion I had gained in 1926. I took the matriculation examination in 1932 on just completing fifteen. But right from October 1930 till February, 1932, Beni Babu groomed me as a labour of love every evening at home in almost all the subjects. Even if one did not count this sacrifice in terms of money, the sheer physical labour of it over a full year and half for a headmaster would be unthinkable today.

There are many such things that he says about his teachers at the school level. But what lends warmth to his writing is his series of portraits of his college teachers. Almost half-a-dozen of them are recalled with emotion and vividness. There are repeated references to the way academic life was organised and how the teachers were intimately involved in it. For instance, he says, "honours schedules were long and tight with classes, tutorials and library work. It was almost a cloistered existence. But the teachers worked harder than you, and you could not complain nor get away".

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Elsewhere, he says :

To think of so much care and solicitude wasted without a thought on a young man who repaid all this by running away for a mess of pottage. I have been a teacher in my later life. I have rejoiced when my pupils excelled me. But I do not think I ever spent on them outside hours a fraction of time that my honours teachers had spent on me ungrudgingly and that too not at my seeking throughout my student days.

In his chapter on the Presidency College he writes not only about his teachers. All kinds of other things are also referred to, for that was a period (1932-36) when a good deal was happening in the rest of the world. He talks of the salt satyagraha, the Kisan Sabha Movement in Bangal, the Round Table Conference, the Earthquake in Bihar, Gandhi's approach to untouchability, the terrorist movement and a number of other things. Whatever, he says is perceptive and balanced. But, what makes the book come alive is his description of the impact that his teachers made on him and the role they played in shaping him.

When he stood second in his honours, one of his professors, the legendary P.C. Ghosh, went over to see his father and personally broke the news to him about his success. After that he took him home and before he knew what was happening he had virtually taken charge of Ashok Mitra. For the next three years he served what is called some kind of a 'discipleship' under him. Recalling the attention bestowed upon him, he comments: "I do not think my own involvement with my best students in the M. Phil and Ph D at JNU was even half as wideranging. No wonder that I decided that my gurus were setting up impossible enough standards for me in the teaching profession, and thought of a career in the civil service instead".

This is strongly put but nothing brings out his indebtedness to his teachers more decisively than the following extract :

I had not studied history in college. But I had met Susobhan Sarkar at the Parichaya Adda. I took courage one Sunday morning and visited him in his first-storey flat at Ekdalia Road. He said he would think it over and asked me to come next Sunday. The following Sunday when I called again, he asked me to come from the first of the month after next. I forget whether it was December 1936 or January 1937.

Just think of the investment and preparation Sushobhan Sarkar made to be able to teach a lone pupil ! He did not teach at college all the periods I

wanted to offer. Therefore, he bought the whole set of the Oxford history of England for the period 1685-1919. Plus Ramsay Muir and Trevelyan. He had also gone in for new standard texts on European history for the period 1714-1919 plus Indian history for the medieval and modern periods. He spoke for about an hour on an average of three mornings in the week. He taught me more about the essential structure of English speech than even my professors of English, and certainly of the principle that less is more. The six papers of history in the civil service examination fetched me, if I remember right, 430 out of 600, and



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A Weekly Chronicle of Higher Education

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29.43 MMT. The consumption of petroleum products during 1984-85 was expected to be around 38.44 million tons, recording a growth of 7.2% over last years consumption. The fast growing shortage and ever increasing prices of petroleum are causing grave concern to all nations, especially to the developing countries. It is feared that the world resources of oil may be completely exhausted in the next 20-30 years, and then we may have no petrol to run our cars and scooters. At present about 30% of India's current crude needs are met by imports; the proportion may rise to about 60% by 1990.

Electricity

We do not have statistics about the production of electricity in the world. In India, the target for power generation during 1984-85 was fixed at 154 billion units. Of this 98.5 billion units were to be generated by thermal stations, 3.5 billion units by nuclear plants and 52 billion units by hydro stations.

Nuclear Power

Nuclear Power accounted for 310 GW(E) or 11% of the world's electricity generating capacity by 1985. Nuclear power generation was initiated in India in 1969 with the commencement of the Tarapur Atomic Power Station with an installed capacity of 420 MW. The following Nuclear Power stations are the recent ones :

Rajasthan Atomic Power Station, Kota
—2x220 MW
Madras Atomic Power Station near Kalpakam
—2x235
Narora Atomic Power Station, Narora (UP)
—2x235 MW

While there is a lot of talk of nuclear energy these days, it should not be forgotten that its production is both costly and difficult. It has been reported that for the next two decades India will continue to maintain nuclear power stations of 235 MW capacity even though all over the world nuclear power units sizes are in the 900-1300 MW range.

In view of the fast depleting resources of firewood, coal and petroleum, scientists have for the last few years been advocating the harnessing of non-conventional sources of energy like Wind energy, Garbage energy, Geothermal energy and Solar energy.

Non-Conventional Sources of Energy

Wind Energy

The US, Sweden and Denmark are the leading users of wind power in the world. The US spent about 200 million dollars between 1973 and 1980 for developing wind-generators. It is planning small generators suitable for homes as well as big turbines which can provide electricity to 2500 average American homes.

A very recent report published in Indian Express of July 4, 1987, tells us about the plans of the Himachal Pradesh Government to harness wind energy in our country soon :

'Preliminary reports indicate that Himachal Pradesh has immense potential to generate electricity from wind. Two aero-generators are likely to be commissioned soon. In addition, two more wind energy demonstration pilot projects have been proposed at Shogi and Tara Devi.

...At Fagu, about 23 km from Shimla, engineers of the Himachal Pradesh State Electricity Board (HPSEB) have measured wind velocity. Fagu has recorded a wind velocity of about 90 km per hour.

...The exploitation of wind power, a cheap and pollution-free energy source is being undertaken for electrification of remote villages keeping battery banks as a buffer. It is also to be used as power supply for communication stations, community centres and for street lighting. Power from wind is proposed to be utilised for pumping out water both for irrigation and drinking purposes."

Garbage Energy

Organic wastes can be converted into energy by various methods, the most promising of which is direct combustion and the conversion of such wastes into alcohol, methane or other storable fuels. A survey of garbage burning plants in 1978 showed that as many as three fourths of the 262 plants were located in Europe; most of the remainders were in Japan, the US having only 6 such plants. Near Rotterdam the world's largest single waste burning facility burns more than a million tons of waste annually to fuel a 55-megawatt electricity generating plant. Waste from many industries—wood waste from forest-based industries, bagasse from sugar industries and cheese, whey, citrus

and vegetable wastes from food industries—have been found useful in producing fuel grade alcohol. It has been estimated that four-fifths of the garbage wastes in US can be converted into 500 million gallons ethanol per year or 0.5% of the gasoline consumption in US.

▲

On the farm front livestock manure and crop-residues, constitute a huge and self-replenishing source of energy. New technologies have been evolved whereby farm wastes can be converted into energy, namely, methane, a natural gas, and the residual waste can be used as fertiliser. This process of digesting livestock manure to produce methane leaving a sludge that formed an excellent manure was first developed in China in 1978. There are about 7 million methane digesters of this type operating in China.

The Indian Biogas (Gobar gas) technology follows almost the same pattern. The Government of India attaches considerable importance to it and a number of gobar gas plants have come up in villages and towns.

Geothermal Energy

Geothermal heat or heat generated in the bowels of the Earth is being reinforced by radioactivity. The heat remains stored up in the interior of the earth, because there are no natural outlets for escape, except the volcanoes. This stock is gigantic and promises to be an inexhaustible source of energy. The rich geothermal resources lie along the so called Ring of Fire that stretches from New Zealand up through New Guinea, the Philippines, Japan, Western Siberia and then down the Western US, through Mexico, Central America and the West Coast and South America. Production of geothermal electricity is still very limited. However, the US, Italy, New Zealand, Japan and Philippines have already started. Total capacity generated by these countries in 1979 was around 2000 MW. By 1983 the US expected to produce about 3% of its electricity this way. The USSR is planning a super-geothermal plant, based on the Avashinski volcano on the Kamchatta Peninsula, at a depth of 3.5 km. (11,500 ft.) which will supply 5,000 MW geothermal power for 500 years. India does not have any such plans.

Solar Energy

Solar energy can be utilised directly or indirectly—directly for heating or similar purpose or indirectly as a generator of electricity. Solar heater is a simple device by which we can use the sun's electricity.

Solar heater is a simple device by which we can use the sun's rays directly for heating. With slight alterations in the mechanism, the solar heater can be used to cook food or distil water. Israel is the only country in the world that has put this technique into use on a national scale. Today roughly 10% of all the Israeli households rely entirely on solar power. It is expected that by 1990 solar heating will increase from 400,000 to 650,000 units. All public buildings are by law compelled to incorporate solar heating systems.

In Asia, the only country that has caught on is Japan. In 1980, over 1.6 million buildings in Japan were using solar heaters. It is planned to increase the number to 7.8 million by 1990 and 12 million by 1995. This means that by 1995, 30% of all buildings in Japan will be fitted with roof top collectors. India receives substantial quantities of solar radiation and the number of sunny days in the year are high. The minimum radiation is in December and for most locations it is about 500 cal/per sq cm/day. The intensity and distribution of solar energy are favourable for its use in India. The government attaches considerable importance to harnessing this source of energy. It is selling solar heaters at subsidised rates in a number of cities.

II

Objectives of a Functional Programme of Energy Education

It is high time that education about the sources, uses, misuses and crisis of energy is imparted to the beneficiaries of formal as well non-formal systems of education in India, and serious efforts are made to develop proper values and attitudes in them which are functional to the conservation and judicious use of energy reserves and the minimisation of environmental pollution.

The specific objectives of such a programme of Energy education may be as under :

1. To inform the learners all about the various kinds of conventional and non-conventional energy—the extent and locations of their availability, their present stocks and future availability possibilities; their uses and abuses, and how human society, science, progress and future—all are inextricably linked with energy questions.

2. To make the learners understand and appreciate the importance of conservation of energy and of the maintenance of the ecological balance.

3. To develop in the learners functional values and attitudes in regard to the use of the various kinds of energy and the preservation of the ecological balance.

4. To make the learners understand and appreciate the impending crisis related to the conventional sources of energy and what havoc it is going to play in our lives in the next 2-3 decades itself.

5. To make the learners appreciate the practical ideas of Gandhiji and Ivan Illich in order to save the energy resources and preserve environmental purity and ecological balance.

In *Deschooling Society*, Illich has rightly advocated the use of more and more of bicycles instead of cars and scooters. Recent developments in regard to the production of a light aluminium body bullock cart with tyre wheels in India and electricity and battery operated cars in India are promising developments.

III

Some Sociological Considerations

Based on our socio-anthropological observations of the Indian society, the following points are offered for the consideration of the Energy education educators

1. In Indian villages (80% of Indians live in villages) people invariably use firewood for cooking. Their *chulhas* are of old type; they consume more fuel and a lot of fuel is wasted in them. New type of *chulahs* are sometimes advocated in villages, but, there is so far no extensive publicity of them.

2. Hindus, Sikhs and Jains who constitute 85.08% of India's population burn their dead in wood; each cremation needs about 15 quintals of dry firewood. They could be educated to save wood energy by opting for electric cremation.

3. Indian railways have been using huge quantities of coal and some diesel. It is only on a few tracts that they use electricity.

4. The novo rich and affluent people of our society consume large quantities of energy in the form of petrol on their cars and scooters, and electricity in their homes. Over consumption of these energy forms has become their status symbol, it seems. They should be taught to be modest and economical in their energy consumption.

5. While there is so much of talk about crisis coming soon, our school and college teachers and our textbooks are completely oblivious of it. They must be made aware of it at the earliest, and our curricula at school and college levels should incorporate units on energy.

6. Our mass media (films, TV radio, news papers) are obsessed with the themes of sex, violence, crime, narcotics, slums, smuggling, politics, etc. but not with the energy crisis. Suitable programmes, articles, etc. should be put up by them regularly to educate the masses on energy matters.

7. Widespread corruption in State Forest Departments is responsible for the fast denudation of our forests in UP, HP and other states. It should be curbed.

8. Movements such as Chipco and Vanamahotsava should be vigorously and sincerely launched involving all sections of people.

9. Due to the lack of foresight and insensitivity on the part of our panchayats and municipal personnel, huge amounts of garbage lie just scattered here and there. There are few projects to use it to produce biogas and other forms of energy.

10. Orthodox Hindu families prefer not to use biogas for cooking food.

11. While the solar cookers have started selling in India, there is still very less publicity and their subsidised prices are still on the high side.

12. Our Vedio literature and folklores of almost all the regions of India greatly emphasize respect to vegetation, tree worship, planting trees on happy occasions, and taboo on felling certain trees. Such useful ancient values should be re-emphasised now.

13. Efficient and fast future transport systems should be developed in cities and towns so that people may be demotivated to own personal vehicles and thus save energy.

14. Users of scooters and cars generally do not know how to save petrol while driving. They should be educated by TV and other mass media.

15. Users of LPG gas also need to be educated likewise in saving the cooking gas.

16. Use of simple energy saving tools and appliances should be re-emphasised. Thus, hand fans instead of electricity fans, cycles instead of scooters, bullock carts instead of trucks and tempos, earthen pitchers instead of refrigerators and water cooler and solar heaters, gobar gas instead of sophisticated cooking ranges should be popularised. To bring about such a change in attitudes and habits of the masses, the leaders and high ups will have to set examples, for downwards filtration theory works well.

17. Architects and builders have recently suggested that instead of using cement if mud and locally available materials and bricks are used, houses can be built cheaply, and they can be far more airy, cooler, full of light and functional. They will naturally then need less electricity in cooling and lighting. House builders ought to be educated on these lines by the mass media, especially the TV.

18. A widespread social consciousness has to be developed in our people through formal, informal and non-formal channels of education in regard to energy use. All wasteful habits as such should be avoided. Energy resources should be used miserly and judiciously and false vanity in overspending them should be looked down upon, even punished. Innovative

practices aimed at economical and optimal use of electricity and oil should be encouraged. Public opinion should be mobilised for fruitful actions. Individualistic tendencies should be discouraged and considerations of public cooperation and public welfare emphasised.

All these questions have social bearing. Simply teaching about energy crisis in the form of an additional subject won't work. An attitudinal change has to be brought about in the vast masses of the people for which sociological, psychological and anthropological insights should be made use of.

There is going to be an energy crisis, no doubt, if we do not take adequate preventive measures today. But there is no need for despondency. Let us take inspiration from these words of G.R. Whitefield quoted in the Survival Newsletter 975 : I :

"We are indigenous and adaptable species, and now we have the power to destroy life on our planet, we have perhaps the wisdom to save it. We are engineering the planet, whether we like it or not, so we had better do it well, controlling our own growth, limiting our greed and getting back to ways of life that can be sustained indefinitely." □

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
November 16-20, 1987	Seventh National Symposium on Radiation Physics.	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics.	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
Nov. 23-Dec. 5, 1987	VIIth International Workshop on Physics of Materials.	Topics proposed to be covered are: Semiconductor Materials; Soil Energy Materials; Laser Materials; Dielectric Materials; and Superconducting Materials.	Jamia Millia Islamia, New Delhi in collaboration with Asian Physical Society, UNESCO, COSTED.	Prof. Z.H. Haide, Convener, VIIth International Workshop on Physics of Materials, Department of Physics, Jamia Millia Islamia, New Delhi-110025
November 25-27, 1987	International Conference on Mud Architecture.	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboration with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electro-analysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems.	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur.	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur - 721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy.	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 28-30, 1987	Third National Conference on Surfactants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.
December 28-31, 1987	33rd All India Library Conference	To discuss various aspects of modernisation in Libraries	Bharathidasan University in collaboration with Indian Library Association	Mr. A. Sundararajan, Organising Secretary, 33rd All India Library Association, University Library, Tiruchirappalli 620023

Sweeping Powers for Medical Council

The Medical Council of India is reportedly being vested with sweeping powers to coordinate and streamline the standards of medical education at all levels.

The Indian Medical Council Amendment Bill, 1987, introduced in the Rajya Sabha in the last session makes mandatory for the Council's permission to be sought for the opening of new medical colleges, new courses, or increase in the number of seats in existing medical colleges. It also prohibits collection of capitation fee, donation or gifts and provides for punishment for contravention of these provisions.

The bill provides that the Medical Council of India shall :

- Coordinate and determine the standards of medical education at all levels ;

- Regulate the practice of medicine in India and maintain the Indian medical register ;

- Advise the Centre in matters relating to the requirements of manpower in the field of medicine ; and

- Undertake periodical review of undergraduate and postgraduate medical education.

The bill seeks to meet certain shortcomings and inadequacies in the existing Act. According to the statement of objects and reasons of the Bill, there is no uniformity in medical education and improving the quality of education, maintaining uniform standards and co-ordinating such standards have become all the more necessary after the inclusion of education in the Concurrent list of the seventh Schedule of the Constitution.

The bill stipulates that no medical college or person in charge of or responsible for the management shall :

- (A) Accept either directly or indirectly, any donation, gift or

other payment (by whatever name called) whether in cash or in kind of any amount by way of capitation fees.

- (B) Receive any fee or amount in excess of the scales of fees prescribed by the Medical Council from or in relation to any student, whether Indian or foreign, in connection with the admission or transfer of such student.

Whoever contravenes the provisions of Section D shall without prejudice to the provisions of Section 10E be punishable with imprisonment for a term not less than three years but may extend to seven years and with fine up to Rs. 5,000.

Clause 12 seeks to insert new sections to regulate the establishment of new medical colleges, opening of new course of study or training and increasing the admission capacity of medical colleges in relation to any course of study.

It also seeks to impose certain restrictions with regard to admission of foreign students which shall be in accordance with the rules made by the Central Government and the reservation of seats for the

scheduled castes and scheduled tribes in various courses.

It will regulate the fee with regard to different classes of medical colleges and for Indian and foreign students.

Clause 33 seeks to make a provision for saving any action taken under a state law for prosecution of persons who have committed offences under such law for the levy of collection of capitation fee or any other fee or amount in excess of the fee under such law for admission to medical colleges.

A new section provides that no court shall take cognizance of an offence punishable under the Act except on a complaint made in writing by the Medical Council of India or any officer authorised by the Council.

Another clause enables the Medical Council to make regulations with respect to age, qualifications, and minimum requirements for admission and the courses of study, period of study and practical training to be undertaken as also to conduct examinations, admissions to such examinations, prescribing forms of applications and fees for such admissions. □

Recent Publications

1. Handbook of Medical Education-1987 : Rs. 45.00
2. Monograph on Sample Free Item Analysis : Rs. 50.00
3. Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84 : Rs. 180.00
4. Educational Statistics at a Glance : Rs. 75.00
5. Education and Economic Development : Rs. 25.00

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Ramanujan Centenary Celebrations

To commemorate the birth centenary year of the noted mathematician, Srinivasa Ramanujan, the School of Mathematics of the Madurai Kamaraj University, has arranged a series of activities to honour his memory.

Prof. D.N. Misra, Adviser (M), CSIR, inaugurated the activities on April 4, 1987. An exhibition of memorabilia of Srinivasa Ramanujan was organised on the occasion.

The following programmes have been planned as part of the year-long celebrations :

Ramanujan Centenary Lectures : Under this programme, a series of lectures by eminent mathematicians is being arranged. The aim of these lectures is to clearly explain the works of Ramanujan in the modern language so that several people especially students can understand and take up further work from the foundations which Ramanujan had laid.

The inaugural lecture was delivered on 29-4-1987 by Prof S. Raghavan, Dean, School of Mathematics, TIFR, Bombay. The second group of lectures were delivered on 3rd and 4th August, 1987 by Prof. R. Sivaramakrishnan, University of Calicut.

Ramanujan Centenary Symposium : A research symposium connected with Ramanujan's works was held from 5-10 October, 1987. Prof. R.P. Bambah, Vice-Chancellor, Panjab University inaugurated and Prof. R.P. Agarwal, Vice-Chancellor, Rajasthan University delivered a special address. Supported by the University Grants Commission, the proceedings of the symposium are to be dedicated to the memory of Ramanujan. It is

also proposed to publish these proceedings.

Ramanujan Centenary Exhibition: A collection of memorabilia of Ramanujan's life and mathematical works together with attractive charts on some famous solved and unsolved problems in mathematics are being collected to form a permanent exhibit. An initial exhibition of such materials was opened at the inauguration day on April 4, 1987. This nucleus is being expanded, and requires further support. There will be an essay competition of the postgraduate students of this University. The School also proposes to start Ramanujan Study Circle.

Diploma in Creative Writing

The Indira Gandhi National Open University has announced the launching of a Diploma Course in creative writing in English. The programme is intended to provide understanding, skill and professional knowledge about the art of writing to help develop the creative ability. The programme comprises two compulsory courses—General Principles of Writing, and a Guided Writing Project, and any three of the following elective courses, namely, Feature Writing, Short Story, Writing for Radio & Television, and Writing Poetry.

The Programme is open to anyone who is 25 and above in age as on 1 January 1988 and has a genuine aptitude for imaginative writing. The essential requirement for this programme is that a candidate should be able to demonstrate reasonable competence in the use of English language. No formal degree is required for the course.

Admission will be decided on the basis of the evaluation of the answers by the candidate in the self-appraisal form attached with the application form.

Further details can be had from The Director (Admissions), Indira Gandhi National Open University, K-76, Hauz Khas, New Delhi-110016.

Purvanchal Varsity

The Uttar Pradesh Government has decided to establish the Purvanchal University. To be located at Jaunpur, the University is expected to start functioning from the next academic session. This will be the 14th university in the State.

According to State Education Minister, Mr. Syed Sibte Razi, the University will cover six districts—Azamgarh, Ghazipur, Jaunpur, Mirzapur, Ballia and Varanasi. Altogether 68 degree colleges would come under the University. At present it will work only as an examining and administrative body.

The University has been established to lessen the burden of Gorakhpur University which is now administering a record number of 104 colleges.

A 208-hectare site has been acquired for the construction of the university buildings with the sanctioned outlay of Rs. 4 crores.

Dr. Harimurti Singh has been appointed as the first Vice-Chancellor of the University.

We Congratulate . . .

Dr. C.R. Mitra, Director, Birla Institute of Technology (BITS) and former President, AIU, who has been conferred the 'Honor Summus' medal by the Watumull Foundation of the United States for his outstanding and exemplary contribution to India's educational development since independence.

Research Assistance for Education Deptt.

The Post-Graduate Department of Education, of the S.N.D.T. College of Education for Women, Pune under the SNDT Women's University has been selected by the U.G.C. for the Departmental Research Assistance for a period of three years. The thrust areas are Educational Technology, Educational Psychology and Teacher Education, Technology for teaching and management. A research project on Research Aptitude has also been approved under this assistance. The Department has been granted about Rs. 9 lakhs for a period of three years under this programme.

Infrastructural Facility

A 350-tonne Hydraulic Press with steam heated platens 60 cm x 90 cm, 3 day light has been installed and commissioned in Regional Research Laboratory, Jammu. The Press is also fitted with thermostatic control for controlling platten temperature. With this facility studies for utilization of ligno cellulosic waste available as agro industrial and forest residues will be conducted for making of different kinds of composite materials.

Already some laboratory data on *Lantana camara*, an abnoxious weed, in combination with cotton stalks and forest waste has been obtained for composite board. This Press will also be a facility for scaling up work.

Music Archives

The Music Department of the Tamil University, Thanjavur, proposes to establish an archives to preserve the ancient tradition of Tamil Isai. Music Discs, tapes, etc. of eminent artists of traditional music and rare musical instruments will be collected and preserved in this archives. All India Radio,

H.M.V. Gramophone Co., Saraswathy Stores (Columbia) and other Institutions and individuals will be contacted to collect the same. Photographs and biographies of Tamil composers, musicians, and musicologists will also find a place in this archives.

Telugu Varsity Endowment

Telugu University, Hyderabad is reported to have decided to create an endowment of Rs. 2.50 lakhs in the Tamil University, Thanjavur for establishing a Department of Telugu Studies.

National Seminar on Folklore

The Department of Tamil Studies of the Madurai Kamaraj

University recently organised a national seminar on Folklore. The theme of the seminar was "Folklore and modern technology". Papers based on sub-themes such as modern media and oral tradition, folklore genre in the modern world, performing folk arts and the mass media, production and dissemination of modern folklore, folklore and mass culture in India, folk medicine and its importance in the modern world were presented.

About 80 scholars from different parts of India belonging to various disciplines such as Sociology, Folklore, Anthropology, Literature, Linguistics, History, Medicine and Music participated. Dr. Saraswathi Venugopal directed the seminar.

News from Agril. Varsities

Mitigating Drought Losses

Indian Council of Agricultural Research (ICAR) is reported to have prepared a macrolevel analytical report for increasing the production of foodgrains and fodder for livestock during the rabi season to compensate for the losses suffered in the kharif due to unprecedented drought. This was announced at a meeting of Vice-Chancellors of all the 26 agricultural universities of India, specially convened by ICAR in New Delhi recently to discuss the key issues.

The issues discussed at the meeting related to (1) how to compensate for the losses suffered in the kharif season as a result of the drought and floods through increased production in the early rabi and the late rabi seasons, (2) development of short-term and the long-term plans for developing technologies that are drought-proof and/

or less influenced by the vagaries of weather in future; and (3) undertaking studies for future guidance on the short-term and long-term effects of drought on farmers, farm-labours and livestock.

According to ICAR sources, the agricultural universities were stepping up the seed production of cereals, oilseeds, pulses and also of fodders and horticultural crops. The universities would also train specialists of departments of agriculture of various State Governments and take up the work of speedily transferring the newly evolved technologies by involving the scientists, teachers and students at village level. Work of identifying the drought tolerant and drought escaping varieties of crops could be further intensified.

The Vice-Chancellors' meeting

recommended that NREP, FLEGP and other such schemes, aimed at the improvement of rural areas and people, should dovetail their activities to create permanent assets like desilting, repairing and digging of tanks and wells for augmenting water resources for life saving, irrigation and reclamation of saline and alkaline areas.

The meeting was of the view that since India had been experiencing drought through centuries in one part or the other, there should be a long-term strategy for minimising the ill-effects of such weather aberrations by appropriate watershed management and afforestation. Since water is the most crucial input for any living organism, whether plant or animal, it is felt that the water that is lost into the sea each year through major river systems should be diverted through appropriate links between different river systems. For this, the Himalayan catchment area should also be so managed that the flow of water into plains is regulated, minimising the impact of twin-problems of floods and drought. Unless the immense water resources were properly exploited and wastage through run-off stopped, future agriculture would continue to be subjected to the vagaries of weather inflicting sufferings on human and animal wealth of the country.

Another recommendation made at the meeting was that the agro-forestry, silvi-pastoral and silvi-horticultural systems should be popularised in the countryside to meet the fuel and fodder requirements. Paddy straw and sugarcane bagasse surpluses are available in high production on states, which need to be linked up with areas of permanent fodder deficit areas for creating fodder banks. Paddy straw and sugarcane bagasse, after treating with urea, make a nutritious fodder for livestock.

Biological Control of Pests

The Centre for Plant Protection Studies and the Directorate of Extension Education of the Tamil Nadu Agricultural University, Coimbatore conducted a workshop on "Biological Control of Pests and Plant Pathogens of Crops". The objective of the workshop was to impart knowledge on the latest technology in mass production of beneficial organisms and their field use in the management of crop pests besides the newer concept of use of antagonistic organisms in controlling fungal diseases.

Over 20 Agricultural Officers of the State Departments of Agriculture and Oil-seeds attended the workshop. Padmasri Dr. J.S.P. Yadav, Research and Educational Adviser of the USAID Programme, New Delhi and formerly Vice-Chancellor, Haryana Agricultural University and Chairman, Agricultural Scientists Recruitment Board, ICAR, distributed the newer biocontrol agents and certificates to the Officers.

Workshop on Rabi Crops

Shri Mahender Singh Rathi, IAS, Vice-Chancellor, Haryana

Agricultural University, recently inaugurated a two-day Agricultural Officers' Workshop on Rabi Crops. Mr. Rathi asked the scientists to concentrate their research activities on evolution of crop varieties suitable for rain-fed and restricted irrigation tracts. He said that the production potential in oil-seeds, pulses and sugarcane has not been fully realised as yet. Laying stress on diversification in agriculture, he made a plea for development of new technology in the fields of horticulture, forestry, apiculture and poultry, etc. Improved farm implements suited to dry-land agriculture, he said, were very much needed. He opined that water and soil moisture needed to be utilised most judiciously and effectively since the situation regarding availability of water was not likely to improve in the near future.

About 300 agricultural officers, farm functionaries, scientists and some representatives of private firms attended the workshop in which strategies for the rabi crops were decided and a package of practices evolved for the coming season.

News from Abroad

Foreign Students in USSR

According to Artur Belov, Deputy Minister of Higher and Specialised Secondary Education of the USSR, more than 250,000 foreigners have graduated from Soviet colleges. Over one-third of them (90,000) are from developing countries. Nearly 20,000 foreign postgraduate students have defended their theses in the Soviet Union and become Ph.Ds.

Today, 110,000 foreigners from

149 countries, mostly developing nations, are being trained at more than 500 educational establishments and research institutes of the USSR Academy of Sciences. The majority of graduates are engineers, doctors, teachers, agronomists, veterinaries, physicists, mathematicians and lawyers. The Soviet Union views this work as part of its foreign policy activities and a contribution to solving global problems, including development of public health, education, transport, power engineering and agriculture.

Foreigners are taught according to the same curricula as Soviet students. They have special subjects and courses (over 150) which take into consideration specific natural, climatic and other conditions in their respective countries, for example, a course in tropical and subtropical farming, tropical medicine, designing and industrial and housing construction in mountain regions, hot and dry climate and high seismicity. Such courses consist of lectures and laboratory work and form part of the curricula.

There are different ways of teaching at various colleges and faculties. Chemistry, biology, geology, physics, mathematics and other similar subjects take up an average of 70 per cent of the instruction hours at natural science faculties. The remaining hours are spent on humanities. In engineering colleges some 50 per cent of the hours go on engineering subjects, 30 to 40 per cent on special courses and practical training and 10 to 20 per cent on socio-economic and other subjects.

Education of foreigners at Soviet colleges, including the preparatory departments for those who cannot speak Russian is free. Moreover foreign students, postgraduates and trainees receive stipends from 80 to 200 roubles a month. Those who arrive from hot countries receive warm clothing worth up to 300 roubles. In summer they are offered discount vouchers to health resorts or tourist inns. Like all Soviet citizens, they have a right to free medical assistance.

Education & Society in Japan

International Internship Programs (IIP) is offering to educators an opportunity to observe Japan's educational system. From January 6

to January 27, 1988, educators may participate in a special seminar titled "Education and Society In Japan" to be held in Tokyo, Japan. The participants to the seminar will study different educational methodologies and the system and philosophy of Japanese education. Studies and lectures will be complemented with visits to and observation of local schools and

educational institutions. This overseas project provides a unique opportunity for interaction with Japanese educators.

Those interested to register for IIP's Study Abroad Projects may contact, for further information, International Internship Programs, 406 Colman Building, 811 1st Avenue, Seattle, Washington 98104 or call (106) 623-5539.

Sports News

Freedom Forty Matches

As part of the celebrations of the 40th anniversary of our independence, Hockey and Football matches are being organised at Delhi and Calcutta respectively between Ex-International XI and Indian Universities XI. The underlying idea in arranging these fixtures is to symbolise the transfer of expertise from the older generation to the present generation.

Ex-International is likely to comprise former players who have donned National colours in International competitions like Olympics, Asian Games, etc. It will be a

unique experience for the young university players to match their prowess with the veterans.

Freedom Forty Matches, as these will be popularly known, are being organised and conducted by the Sports Authority of India AIU will select and train the Indian Universities Teams. The Teams will be selected on the basis of performance of players in the respective Inter-University Tournaments. The matches will be played as per details below :

Football—Calcutta, December 5, 1987.

Hockey—New Delhi, January 25, 1988.

ASSOCIATION OF INDIAN UNIVERSITIES NOTIFICATION

It has come to the notice of the Association of Indian Universities that several advertisements have appeared in the newspapers in the name of NEWPORT UNIVERSITY, CALIFORNIA, USA for MBA, BBA and other degree courses to be conducted by some private institutions in India. All concerned are informed through this announcement that the so called Newport University, California, USA, is NOT an accredited institution in USA; the question of its recognition in India, therefore, does not arise. The notification is issued in the interest of all those who have been attracted by the claims about the aforesaid Institution as advertised in the newspapers.

Students, Teachers, University administrators and others are welcome to seek information on the status of any university from Deputy Secretary (Evaluation), Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

ADDITIONS TO AIU LIBRARY

Aditi : *The living arts of India*. Washington, Smithsonian Institution Press, 1986. 280P.

Anand, R.L. *Playing field manual*. Patiala, Netaji Subhas National Institute of Sports, 1971. 119p.

Ansari, M.M. *Education and economic development*. Delhi, A.I.U. (c 1987) xi, 57p.

Brijbhushan, Jamila. *World of Indian Miniatures*. Tokyo, Kodansha International (c1979) 205p.

Camp, Richard R and others. *Toward a more organizationally effective training strategy and practice*. New Jersey, Prentice-Hall (c1986) x, 405p.

Curtice, Robert M. *Strategic value analysis A modern approach to systems and data planning*. New Jersey, Prentice-Hall (c1987) xi, 113p.

Davies, Don. *Maximizing examination performance : A psychological approach*. London, Kogan Page (c1986) 146p.

Debi, Renu. *Progress of education in Assam*. Guhati Omsons Publications, 1987. vi, 238p.

Dennison, Bill and Shenton, Ken. *Challenges in educational management : Principles into practice*. London, Croom Helm (c1987) 213p.

Devi Prasad. *Peace education or education for peace : A thesis*. Delhi, Peace Foundation (c 1984) 148p.

Gardner, Johan W. *Excellence . Can we be equal and excellent too ?* Rev ed. Bombay, Vakils, Feffer Simons (c 1984) 175p.

Goa, Delhi, Vikas (c1984) 120p.

Goyal, M.R. and Gupta, Mahesh C. *Anatomy of medical education*. New Delhi, Central Subscription Agency, 1986. x, 306p.

Gupta, B. M. and others, ed. *Handbook of libraries, archives and information centres in India*. 5V. (V 4) *Asia-Pacific Co-operative information systems, networks and programmes*. (3V Already received). Delhi, Information Industry Publications, (c 1986) xiii, 232p.

Jayaram, N. *Higher education and status retention. Students in a metropolis*. Delhi, Mittal, 1987. xviii, 193p.

Jenks, James M and Kelly, John M. *Don't do delegate ! The secret power of successful managers*. London, Kogan Page (c1985) 174p.

Journey through India. Delhi, Lustre Press (c 1986) 96p.

Keller, Robert. *Expert system technology : Development and application*. New Jersey, Yourdon Press (c1987) xxii, 246p.

Kulkarni, S.S. *Introduction to educational technology : A systems approach to micro level education*. New Delhi, Oxford & IBH (c1986) x, 479p.

Kundu, Chunilal. *Personality development A critique of Indian studies*. Kurukshetra, Vishal, 1977, xvi, 288p.

Mridula. *Educational statistics at a glance*. Delhi, A.I.U. (c1987) xxiv, 193p.

Mukherjee, Pranab. *Beyond survival : Emerging dimensions of Indian economy*. Sahibabad, Vikas (c1984) vii, 264p.

Owens, Robert, G. *Organizational behaviour in education*. New Jersey, Prentice-Hall (c1970) xxx, 332p.

Raghavan, G.N.S. *Introducing India*. New Delhi, Indian, Council for Cultural Relations, 1983, 130p.

Schauer, Bruce P. *Economics of managing library service*. Chicago, American Library Association (c1986) xii, 278p.

Sharma, G.D. and Ahmed, Shakti R., ed. *Methodologies of teaching in colleges*. Delhi, NIEPA (c1986) ix, 217p.

Van Alstyne, Judith S. *Professional and technical writing strategies*. New Jersey, Prentice-Hall (c1986) x, 433p.

Vasudev. *Doctrine of Ahimsa*. Delhi, Wasudhir Foundaion. 243p.

Veeraraghavan, Vimla. *Rape and victims of rape*. Delhi, Northern Book Centre, 1987. x, 126p.

Wakhlu, D.N. and Labru, G.L., ed. *Leadership in technical education institutions*. Srinagar, Regional Engineering College, 1982. ix, 180 p.

Yadav, S.K. *Non-formal education : A new policy perspective*. Delhi, Shree Publishing House, 1987. vi, 152p.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Rath Bhikari Charan. *Strawson's Philosophy of language*. Utkal.

2. Sarkar, Sunil Kumar. *A critique of phenomenology*. NBU.

3. Sharma, Meenakshi N. *A comparative study of the influence of moral values on parent child relationship in the age group of 9-16 in Northern India and in the State of California*. Durgawati.

Fine Arts

Drawing and Painting

1. Chaturvedi, Mamta. *Jaipur shaili ke bhisti chitra*. Rajasthan. Dr. J.S. Mehta.

Music

1. Nigam, Sarita. *Hindustani sangeet mein raag vargikaran: Ek adhyayan*. Delhi.

Language & Literature

English

1. Chellammal, E. *Southernness in the novels of Carson McCullers*. Anna.

2. Dharker, Deval Chandrakant. *Madness, violence and comic cruelty in recent American fiction*. Baroda.

3. Grover, Malta. *Bhabani Bhattacharya as novelist of social conscience*. Roorkee.

4. Sarma, Karri Godavari. *Trends in post-independence Indo-Anglian poetry*. Andhra.

Sanskrit

1. Arya, Vijaypal. *Kasikagatalaksyavisesanam : Arthah prayogasca*. Delhi.

2. Belsare, P.H. *Sarasvatikanthabharana : A study*. Osmanli.

3. Gayen, Jyotsna. *Some aspects of the earliest physical features and natural and political divisions of India as known from the Ancient Indian texts*. Calcutta.

4. Gogoi, Pradip Kumar. *The origin and development of the Harichandra Legend*. Gauhati. Dr. Ashok Kumar Goswami.

5. Gupta, Shashi. *Vidyaranya krita vivarana prameya samgraha antargata adhyasa prakarana : Ek adhyayan*. Delhi.

6. Lakshmi Kutti, P.A. *Bhasa and his plays*. Bangalore. Dr. K. Rajagopalachar.

7. Pant, Deepa. *Sanskrit kalashastra ke paripreksha mein Shri Harsh ke natya kritiyon ka vivechanatmak adhyayan*. Rajasthan. Dr. G.D. Bhatt.

8. Pathak, Jiban Chandra. *The Krishna Cult in Assam : A study in its antiquity, literature and philosophy*. Gauhati. Dr. B.N. Hazarika.

9. Satya Surayanarayana Murthy, Kandukuri. *Sri Peri Suryanarayana Sastri varivasya*. Andhra.

10. Sharma, Surender Kumar. *Siddhasidhanta Paddhati Eka adhyayana*. Delhi.

11. Venkata Satyanarayana Murty, Eman. *The treatment of minor areas in Ancient Sanskrit plays*. Andhra.

Punjabi

1. Krishna Kumari. *Guru Ravidas Jee da bhakti marg*. Panjab.

2. Pritam Kaur. *Dalip Kaur Tiwana da Galap Jagat*. Delhi.

Hindi

1. Chawla, Jyoti. *Charitropakhyan : Sahityik tatha sanskritik adhyayana*. Delhi.

2. Dholala, D. *Premchand aur shoshit varg : Kahaniyon ke sandarbh mein*. Gulbraga. Dr. S.M. Kappikeri.

3. Gupta, Meenakshi. *Natya bhasha aur Bharatendu Harishchandra*. Delhi.

4. Gupta, Shashi Bala. *Yashpal ka kahani sahitya : Chintan aur shilp*. Kurukshetra.

5. Marawar, Vasundhara. *Hindi ke mahila upanyaskaron ke nari ke chitran ka anusheelan*. Nagpur. Dr. Indrapal Singh.

6. Mishra, Umesh. *Hindi mein nayak-nayika bhed aur uski kalatmak uplabdhiyan*. Rajasthan. Dr. V.N. Upadhyay.
7. Mohbansi, Rajrani. *Hindi ekankiyon mein nari chitran*. Nagpur. Dr. Ghanshyam Vyas.
8. Prabhu, Nirmala. *Sri Sumitra Nandan Pant ke kavyon mein parilakshit adhunik vichardharayen*. Bangalore. Dr. (Mrs) Kanti Singh.
9. Pramila, Somuri. *Personality of Dinkar*. Andhra.
10. Puri, Kusum. *Samkaleen Hindi upanyas mein mahaganariya bodh*. Panjab.
11. Shashi Prabha. *Sarkhattari Hindi upanyas : Mulya chetna*. Delhi.
12. Shri Prakash. *Punarjagaran aur Hindi kavita, 1850-1920*. Delhi.
13. Singh, Rajkumari. *Hindi aur Angrezi ke anchalik upanyason ka tulnatmak adhyayan*. Osmania.
14. Vyas, Minakshi. *Sarveshwar ke kavya ka shailivaigyanik adhyayan*. Delhi.
15. Vyas, N.N. *Swatantrayottar Hindi natya sahitya aur rashtriyata*. Saurashtra. Dr. G.D. Agrawal.
16. Wasdev, Harbans Lal. *Yugbodh ke sandarbh mein Tolstoy aur Premchand ka upanyas sahitya*. Panjab.

Urdu

1. Khurshid Anwar. *Sense of history in Qutub AIn Hyder's novels*. JNU. Dr. Aslam Parvaz.
2. Yasmin Khanum. *The contribution of the Department of Urdu, Osmania University to Urdu language and literature*. Osmania.

Bengali

1. Gayen, Ramapada. *Bangla Upanyasur kalakritik bibartan*. Calcutta.
2. Goswami, Asokananda. *Dinabandhu Daser Sri Sri Sankirtanamrita*. Calcutta.

Oriya

1. Dalai, Patitapaban. *Social awareness through short stories of Pandit Godawarish Mishra*. Utkal.
2. Mohanty, Srikantha. *A study on the imagery in modern Oriya poerty in the light of philosophy of language*. Utkal.
3. Pradhan, Pravakar. *Socialist realism and Poet Anant Pattanayak*. Utkal.
4. Sarangi, Sarat Kumar. *Odia Krushna Kavya o Kabir Dinakrushna*. Sambalpur. Dr. G.C. Mishra.

Arabic

1. Sadia, Haleema. *Arab wa Hind ke talluqat*. Nagpur. Prof. S.A. Rahim.
2. Syed Bashir Ahmad. *A critical study of Sayyed Qutb as a modern writer in the light of his works and literary achievements*. CIEFL.

Kannada

1. Priyadarshini, Mangala. *Navodaya kavyadallit anubhava vada Amshagalu-Ondu adhyayana*. Bangalore. Dr. G.S. Shivarudrappa.

2. Shetty, N. Damodara. *Muddanana shabdesrishti mattu prayoga*. Mangalore. Dr. Srinivasa Havanour.

Telugu

1. Padmini Devi, B. T. *Telugule Panchatantra Kavyamulu*. Osmania.
2. Venkatacharyulu, Kotto. *Kallakuri Narayan Rao Rachanalu*. Osmania.

Thai

1. Muangnil, Samnieng. *Some topics in generative phonology of Thai*. Delhi.

Geography

1. Sinha, Braj Raj Kumar. *Human resources utilization in Dhanarua Block of Patna District, Bihar*. Baroda.

History

1. Amiya Devi. *Assam under King Rudra Sinha : A critical study*. Gauhati. Dr. N.N. Acharyya.
2. Chakrabarti, Gayatri. *Espionage in Ancient India*. Calcutta.
3. Dasgupta Atiskumar. *The Fakir and Sannyasi uprisings*. Calcutta.
4. Deka, Dinesh Chandra. *The Bodos of Kamrup : A sociological study*. Gauhati. Dr. N. Hazarika.
5. Kaushik, Shobha. *Railways in Rajasthan : A study in historical perspective, 1982-1951*. Rajasthan. Dr. U.C Chaturvedi.
6. Krishnan, K. *Chemical and petrological studies in Ancient Indian pottery*. Baroda.
7. Panwar, Madanlal. *Mahamana Pt Madan Mohan Malviya ka vyaktitva evam krititva*. Vikram. Dr. B.G. Sharma.
8. Rahman, Mohammad Abdul. *A critical analysis of the Nizam's Government's policies regarding social and political problems in the State, 1935-48*. Osmania.
9. Rathaur, Mohan Singh. *Nineteenth century CIS-Sutlej Hill States : Economy and society*. HP.

Shortly Releasing

1. New Technologies in Higher Education
2. Studies in Distance Education

Address Enquiries to :

Under Secretary (Publications)

ASSOCIATION OF INDIAN UNIVERSITIES

AIU House, 16 Kotla Marg,
New Delhi-110002

Telephones : 3310059; 3312305; 3312429 and 3313390

Telex : 31 5578 AIU IN

Gram : ASINDU

CLASSIFIED ADVERTISEMENTS

MOTHER TERESA WOMEN'S UNIVERSITY

KODAIKANAL 624 102

Notification No. 36

Applications in the prescribed form are invited from lady candidates for the following posts :—

	Post	No. of Vacancies
1. Women's Studies pertaining to Economics	Professor Reader Lecturer	One One One
2. Women's Studies pertaining to Education	Reader	One
3. Women's Studies pertaining to English	Reader Lecturer	One One
4. Women's Studies pertaining to Family Life Management	Professor Reader Lecturer	One One Two
5. Women's Studies pertaining to Historical Studies.	Reader	One
6. Women's Studies pertaining to Sociology	Professor Reader	One One
7. Women's Studies pertaining to Psychology	Professor Reader Lecturer	One One Two
8. Coordinator for Extension Work		One
9. Coordinator for Research Projects		One

Essential qualifications for the posts are : Professorship

An eminent scholar with a doctorate degree and published work of high quality, actively engaged in research, 10 years experience of teaching and/or research, experience of guiding research at doctoral level and evidence of being actively engaged in Women's Studies.

Readership

Good academic record with atleast high second class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in women's studies, 5 years experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Lecturership

(a) A doctorate degree or research work of an equally high standard.

(b) Good academic record with atleast high second class Master's degree in a relevant subject from an indian university or an equivalent degree from a foreign university.

Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) may be in relevant subjects.

Provided further that if a candidate possessing a Doctor's degree, or equivalent research work is not available or is not considered suitable, a person possessing good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed on the condition that she will have to obtain a Doctor's degree or give evidence of research of high standard within 3 years of her appointment failing which she will not be able to earn future increments until she fulfils these requirements.

Coordinator for Extension Work

A good scholar with rich experience of not less than 5 years in coordinating extension work with teaching/research.

Coordinator for Research Projects

Eminent scholar with a doctorate degree and published work of high quality, actively engaged in research and about 10 years of experience in guiding research and conducting research studies.

Scale of pay for the posts are

Professor	—Rs. 1500-60-1800-100-2000-125/2-2500.
Reader	—Rs. 1200-50-1300-60-1900.
Lecturer	—Rs. 700-40-1100-50-1600.
Coordinator for Extension work	—Rs. 1200-50-1300-60-1900.
Coordinator for Research Projects	—Rs. 1500-60-1800-100-2000-125-2500

Note. 1. Appointment of persons on deputation will also be considered, if the candidates are found suitable and the employer is agreeable to spare the services.

- The University reserves the right to shortlist the candidates.
- The Selection Committee reserves the right to relax the qualification and experience in exceptional cases.

Application forms can be had from the Registrar-in-charge, Mother Teresa Women's University, Kodaikanal 624 102 on requisition accompanied by a postal order for Rs. 15/- drawn in favour of Registrar-in-charge and a self addressed Rs. 1.40 paise stamped envelope (35 cm x 10 cm).

The last date for the receipt of filled in applications is 6th November, 1987.

Dr. V.P. Devadatta
Registrar-in-Charge

GURU NANAK DEV UNIVERSITY

AMRITSAR

Advertisement No. 7/87

Applications are invited for the following posts on prescribed form obtainable at a price of Rs 2/- from the office of the Registrar by making written request accompanied by self-addressed Rs. 1-40 stamped envelope of 33 x 10 cms so as to reach this office by 14-11-1987 alongwith crossed Indian Postal Order(s) of Rs 10/- for the posts at Sr. No. 1 to 7 and Rs. 5/- for other posts (non-refundable) drawn in favour of the Registrar, Guru Nanak Dev University, Amritsar.

Persons already in employment must send their applications through their employer. Candidates from within India may not be considered in absentia. Higher start in the grade may be given depending upon qualifications and experience.

The qualifications for the posts of Readers and Lecturers are as prescribed by the University Grants Commission :

Readers (Grade Rs. 1200-50-1300-60-1900)

1. Electronics Technology-2
2. Physics-1
3. Physical Education (Teaching)

Lecturers : (Grade Rs. 700-40-1100-50-1600)

4. Physics (Job Oriented Course)-2
5. Sociology-2
6. Assistant Director Physical Education (Campus)-1
(Grade Rs 700-1600)
- 7-(i) Research Fellow (Chemistry Deptt.)-2 Rs 800/- p.m (fixed)
(ii) Research Fellow-cum-Demonstrator-2 (Chemistry Department) Rs. 800/- p.m. (fixed) +Rs. 100/- demonstration allowance.
8. Technician Grade-II (Physics)-1
(Grade Rs. 480-880)
9. Field Supervisor (Youth Welfare Deptt.) (Grade Rs 400-600)-1
10. Electrician Grade-II (Constn. Wing) (Grade Rs. 400-600)-1
11. Technician Grade-C (USIC)-1
(Grade Rs. 380-560)
12. Cook (For Guest House & Faculty House)-2 (Grade Rs. 400-600)

QUALIFICATIONS/SPECIALISATIONS

Sr. No. 1. Essential

(i) Ph.D. Degree in Electronics and Communication Engg./Electrical Engg. with minimum experience of 3 years in teaching and/or research in a University and/or Institute of repute.

OR

First class Master's Degree in Electronics and Communication Engg./Electrical Engg. with minimum 5 years experience in teaching and/or research in a University and/or Institute of repute.

(ii) Specialised knowledge in Instrumentations/Computer Technology/Communication Engg./Control Systems.

- Sr. No. 2. (i) Solid State Physics.
(ii) Theoretical Physics.
(iii) Radiation Physics.

Sr. No. 3. (A) Specialisation

Specialisation in Physiology of Exercise (Exercise Physiology)/Sports Medicine/Sports Psychology/Sports Sociology / Sports Kinanthropometry/ Research Methodology in Physical Education and Sports.

(B) Preferable

1. Guiding research work for M.P. Ed /M Phil/Ph.D./ students in Physical Education.

2. Teaching experience in a University Teaching department/College of Physical Education for at least 8 years

3. Publication of a "Text Book"/ Research articles in reputed National or International Journals.

4. Achievements in Sports/Games at the all India Inter University and above levels.

5. Administrative experience as Chairman/Head of Department of Physical Education in a University/ Principal of a College of Physical Education/College.

Sr. No. 4. Post (1) Essential

M.Sc./M.Tech in Applied/Exploration Geophysics.

Desirable : Some Teaching/Research Field experience.

Post (2) Essential

M.Sc. Physics/Applied Physics/Geology/Chemistry preferably followed by Ph.D. with specialisation in Nuclear/Exploration Geophysics.

Note : For post No. 1 if a person with M.Tech. degree in Applied/Exploration Geophysics is not available, the post will be filled with qualifications as prescribed for post No. 2.

Sr. No. 5. Specialisation in Industrial Sociology or Social Statistics.

Sr. No. 6. (i) A Master's degree in Physical Education (High Second

Class) with diploma in Sports coaching from a recognised Institution.

OR

A Master's degree in Physical Education (High Second Class) with a record of having represented his University at the Inter University level/State in the National Championship.

(ii) Experience in organising games and sports (as exemplified in handling of about a dozen teams in a year in his Institution and their participation in University/Inter Collegiate tournaments) and ability to encourage mass participation in games and sports.

(iii) Preferably having teaching experience of post-graduate classes.

Sr. No. 7. (i & ii) M.Sc. IInd Class in any branch of Chemistry, preferably with some teaching/research experience

Sr. No. 8. (i) At least IInd Class Matric with Science.

(ii) Three years experience in the Physics Laboratory of a College/University.

Sr. No. 9 (i) Minimum academic qualification B.A.

(ii) Two years experience in Youth Leadership Training Camp/Hiking and Trekking Camp

(iii) Must have achievements in Cultural Competitions.

Sr. No. 10. Essential

(i) Matric

(ii) Certificate in Electrician Trade from I.T.I.

Desirable

2 years working experience in some organisation of repute

Sr No. 11. Diploma in Electronics with some experience or Certificate course from I.T.I. in Electronics with five years experience of repair, maintenance and handling of the electronic Instruments.

Sr. No. 12. (i) Candidate should be able to read & write and maintain day to day accounts.

(ii) Candidates should be conversant with preparation of Indian dishes as well as continental dishes.

(iii) Age should not be more than 45 years.

(iv) Shall have to stay in the guest house as a single man.

The candidates belonging to Scheduled Castes/Backward Classes of Punjab State when called for interview will be paid travelling allowance according to University rules.

REGISTRAR

**NATIONAL CHEMICAL
LABORATORY
PUNE—411 008
(Council of Scientific & Industrial
Research)**

Advertisement No. 7/87

Applications in PRESCRIBED FORM are invited for the following posts in various divisions of this laboratory. Separate application is required to be submitted for each post even if the posts applied for are from the same category/with same qualifications.

**(I) Chemical Engineering Division
Scientist 'C'—5 Posts**

Post 1 (Code No 119)

Candidate should be a first class M Sc (Chemistry)/B. Tech. with atleast six years experience Or M. Tech./M.E. in chemical engineering with four years experience Or a Ph.D. (chemistry or chemical engineering) with atleast two years experience in catalysis, preferably in applied homogeneous catalysis. The selected candidate will join the homogeneous catalysis group of NCL, which is presently engaged in developmental work involving new routes of industrial chemicals.

Post 2 (Code No. 120)

Candidate should be M. Tech. in Polymer technology engineering with four years experience Or Ph. D. in chemical engineering or polymer technology with atleast two years experience in the area of rheology and processing. Candidates with practical experience of polymer processing and/or modelling of processing will be given preference. The selected candidate will join the polymer science and engineering group of NCL, which is presently engaged in developmental work in engineering polymers and polymeric alloys and other high performance featuristic polymeric materials.

Posts 3 & 4 (Code No. 121)

Candidate should be first class M.Sc. (biochemistry or microbiology)/B. Tech. with atleast six years experience or M. Tech./M.E. in biochemical engineering with four years experience or a Ph.D. in chemistry or biochemical engineering with atleast two years experience in work related to biotechnology. The selected candidate will join the bio-science and engineering group of NCL, which is presently engaged in work related to enzyme engineering and fermentation technology.

Post 5 (Code No 122)

Candidate should be 1st class B. Tech. in electrical or chemical engineering with atleast six years experience Or M. Tech. in chemical engineering with atleast four years experience Or Ph.D. (Science) with two years experience in computer software development and process control. Knowledge of dynamic simulation will be considered as an added qualification. The selected candidate will be expected to undertake a wide ranging tasks related to development of software packages (both scientific and non-scientific) for the use of the laboratory.

Scientist 'B'—3 posts

Post 1 & 2 (Code No. 123) (one post reserved for SC community)

Candidate should be a first class B. Tech. (Biochemical engineering) or M. Tech. (Biochemical engineering) Or a Ph.D. in chemistry or biochemical engineering. The selected candidate will join the bioscience and engineering group of NCL, which is presently engaged in work related to enzyme engineering and fermentation technology.

Post 3 (Code No 124)

Candidate should have a first class degree in chemical engineering/chemical technology polymer technology or M. Tech. degree in chemical engineering/chemical technology, polymer technology Or Ph.D. (Science). Background experience on structure property relationships in polymers will be an advantage. The selected candidate will join the polymer science and engineering group of the laboratory, which is engaged in R & D work on industrial polymers.

(II) Process Development Division

**Scientist 'B'—2 Posts (Code No. 125)
(one post reserved for ST community)**

Candidate should have a first class bachelor's degree in chemical engineering or M. Tech. chemical engineering Or Ph.D. (Science). Two years experience in an industrial or research organisation in the above areas is desirable.

Job requirement : The incumbent will have to undertake process development work on laboratory scale and pilot plant and collect data for scale up in the fields of drugs, organic intermediates and petrochemicals.

(III) Physical Chemistry Division

Scientist 'C'—1 Post (Code No. 126)
Ph.D. in theoretical chemistry with two years of research experience supported by good published work in theoretical quantum chemistry as applied to molecular systems. **Job requirement :** The

candidate will have to establish and lead a group of theoretical quantum chemistry.

**(IV) Laboratory Services Section
Head Laboratory Supervisor : 1 POST
(Code No. 127)**

Candidate must be graduate in science or possess a 3 year Diploma in engineering with experience of working in a supervisory [capacity for atleast 3 to 5 years in govt. semi-govt. or autonomous scientific organisation. **Job requirements :** The incumbent will be incharge of workers of Group C and Group D non-gazetted category in different sections who has to perform duties pertaining to (i) public address system (ii) operation of 16 mm and slide projectors, (iii) maintenance of petrol gas plants and oil gas plants, fixtures, fittings of several types, for which he will be personally responsible; and (iv) other supervisory or coordinating work entrusted to the incumbent who must possess qualities of a group leader.

(V) Glass Blowing Section

Senior Technical Assistant—1 post (Code No. 128)

Candidate should have passed atleast matriculation/SSC or equivalent examination. A diploma or certificate course in glass blowing is desirable. **Experience :** Atleast 10 years experience in the fabrication of bench blown glass apparatus including silicaware and high vacuum systems required in chemical laboratories.

Scale of Pay attached to Post and Monthly Total Emoluments at the minimum of the Scale

Scientist C : Rs. 3000-100-3500-125-4500
(Rs. 3940/- p.m.)

Scientist B : Rs. 2200-75-2500-EB-100-4000 (Rs. 2926/- p.m.)

HLS, STA : Rs. 1640-60-2600-EB-75-2900
(Rs. 2296/- p.m.)

These posts carry usual allowances as admissible under the Central Government rules as applicable to the CSIR. Higher initial pay may be given on merit. **Reservation in Favour of SC/ST**

(I) In the event of non-availability of suitable SC/ST candidates for the posts of Scientist B, which are reserved in favour of SC/ST, these posts will be treated as dereserved and general candidates will also be considered for these reserved posts.

(II) A lower standard of suitability in qualifications consistent with the efficiency of administration will be applied.

(III) A certificate issued by the competent authority in support of the claim as belonging to SC/ST community must be enclosed with the application.

General Conditions

1. Relaxation in experience—Minimum years of experience specified for the post of Scientist 'C' is relaxable only in exceptional cases.
2. Applications from the candidates working in Government departments, public sector organisations and Government funded research agencies will be considered only if forwarded through proper channel and with a clear certificate that the applicant will be relieved within one month of receipt of the appointment order.
3. Candidates appointed to the post with engineering qualifications shall, if so required, be liable to serve in any defence service or post connected with the Defence of India for a period spent on training if any, provided that such persons (i) shall not be required to serve as aforesaid after the expiry of 10 years from the date of appointment, and (ii) shall not ordinarily be required to serve as aforesaid after attaining the age of 40 years.
4. Mere fulfilling the minimum prescribed qualifications and experience will not vest any right in a candidate for being called for interview. The laboratory reserves the right to call for interview only those candidates who in its opinion are likely to be suitable and will not entertain any correspondence in respect of other applications.
5. The number of vacancies indicated above are vacancies existing at present. However, if any more vacancies are likely to arise before the time of actual selection, for which the qualifications, experience and job requirements are the same as notified in the advertisement, they may also be considered for filling up.
6. Prescribed Application Forms are obtainable from the Administrative Officer, National Chemical Laboratory, Pune—411 008, on or before 30th October 1987. Request for forms should be accompanied with a self-addressed envelope of size 23 x 10 cm. bearing 50 paise postage stamp. Applications complete in all respects together with a crossed Indian Postal Order for Rs. 8/- (candidates belonging to SC/ST communities are exempted from payment of application fee), payable to the Director, National Chemical Laboratory, Pune 411 008, should reach the Administrative Officer, National Chemical Laboratory, Pune—411 008, not later than 13th November, 1987.

7. Travelling allowance as per rules will be paid to the candidates called for interview.

8. Canvassing in any form and/or bringing in any influence political or otherwise, will be treated as a disqualification for the post.

9. No interim enquiries will be entertained.

10. Candidates found suitable for the post of STA (Glass Blowing) will have to appear for trade test in Glass Blowing.

PANJAB UNIVERSITY CHANDIGARH

(Advertisement No. 10/87)

Applications are invited for the post of Professor at VVBIS & IS, Hoshiarpur in the grade of Rs. 1500-60-1800-100-2000-125/2-2500, so as to reach the Registrar, Panjab University, Chandigarh, along with postal order for Rs. 10 - by 6.11.1987. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

Qualifications Essential

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level, or published research work of high standard in journals of repute in the fields of Lexicography/Vedic Concordance/Vedic studies.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Desirable

Good knowledge of Nirukta and Vedic/Paninian Grammar (Vyakarna). Working knowledge of Avestan, German and French Languages.

The duties of the Professor will include providing leadership for the Project: 'A Comparative and Critical Dictionary of Vedic Interpretation and compilation of Vedic Concordance' undertaken by the Institute.

Note: 1. The Vice-Chancellor could

place before the Selection Committee names of suitable persons for its consideration along with the applications received in response to the advertisement.

2. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.
3. The Syndicate may relax any of the qualifications on the recommendation of the Selection Committee in case of a suitable candidate.

Candidates who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. The candidate has the option to fill this form in all respects on both sides and to attach 9 photostat copies thereof. The candidates are also required to attach ten copies of the list of their research publications with their 'Summary Biodata'.

Persons already in service must route their applications through proper channel. They may, however, send an advance copy of their application on the prescribed proforma, direct to the University. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Incomplete forms will not be considered. Forms received after due date are liable to be rejected unless the Vice-Chancellor condones the delay by a special order. Attested copies of certificates in support of qualifications for Matriculation/School Leaving, Graduation, Post-graduation examination as also for Doctorate degree, be attached to the application. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Assistant Registrar (Estt-I), Panjab University, accompanied by a self-addressed stamped (worth Rs. 3.40) envelope of 23x10 cms and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.